ABSTRACT

DEVELOPMENT OF ANTIBIOTIC RESISTANCE IN *ENTEROCOCCUS FAECALIS* ISOLATES FROM CONVENTIONAL BOVINE DAIRY FARMS, R.C. Johnson, J. Phythyon* Saint Norbert College, Department of Biology, DePere, WI 54115. johnrc@snc.edu

This project investigated both qualitatively and quantitatively the presence of antibiotic resistance among isolates of *Enterococcus faecalis* from conventional bovine dairy operations. Ten fecal samples were obtained from each of ten conventional and three organic farms, yielding a total of 130 isolates. Presumptive isolates of *E. faecalis* were obtained and enumerated according to the differential media methods of the APHA and ASCM. Resistance was assessed using two common microbiological procedures including Kirby Bauer disk diffusion method and minimum inhibitory concentration (MIC) microdilution method; both procedures followed NCCLS standards. The results were analyzed using both one sample t-tests and independent samples t-test; the organic farm isolates served as a control both in methodology and statistical analysis. The percentage of resistant isolates in the conventional farms was significantly higher ($p<0.05$) than the percentage in the organic farms; the mean NIC (Non-inhibitory concentration) for ampicillin-resistant isolates (37) was 9.22 ug/ml and the mean NIC for vancomycin-resistant isolates (44) was 8.77 ug/ml, thereby showing significant ($p<0.05$) resistance. This study concluded that a significant percentage of vancomycin and ampicillin resistant isolates exist in bovine conventional dairy farms.